

KENTUCKY WILD TURKEY BROOD SURVEY & FALL HARVEST REPORT – 2018

Zak Danks, Wild Turkey & Ruffed Grouse Program Coordinator
Kentucky Department of Fish and Wildlife Resource
1 Sportsman's Lane
Frankfort, KY 40601
502-892-4544 / zak.danks@ky.gov



Abstract

Based on the 2018 summer wild turkey brood survey, reproduction improved 68% above last summer. This is based on a poult-per-hen index of 2.0 compared to 1.2 in 2017. This uptick was the product of better weather during the nesting and brood-rearing periods in May and June, and was much needed after two consecutive down production. The better hatch was reflected in a higher fall harvest. I am hopeful this indicates more jakes for this spring and more 2-year-old gobblers in spring 2020.

Brood Survey

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has conducted a summer brood survey since 1984. Staff and volunteer participants record turkeys seen incidentally during routine travels in July and August. We ask participants to record observations hens, poults, males, and turkeys for which sex cannot be determined. We calculate a poult per hen (PPH) ratio to index overall productivity, the percentage of hens with poults to indicate nesting success, a poults per brood (PPB) ratio to index poult survival, and a gobbler to hen ratio to indicate gobbler carry-over after spring hunting. Since 2017, we have followed the Southeast Wild Turkey Working Group's standardized protocol for recording and analyzing turkey observations. In 2018 we used ESRI's Survey 123 application for reporting turkey observations via mobile phone and webpage in addition to traditional paper forms.

We received 789 distinct observations of turkeys, 506 (64%) of which were collected via Survey123 (Fig. 1). The total number of turkeys observed (4,478) was 51% less than in 2017 (9,481) (Fig. 2). However, survey indices for overall productivity, nesting success, and poult survival appear to have been better despite lower sample sizes and thus wider confidence intervals. The statewide PPH ratio of 2.01 (1.83-2.21 95% C.I., Table 1) was 66% higher than in 2017 (1.34, 1.25-1.45 95% C.I.) and 17% higher than the 5-year average (1.7). The percentage of hens with a brood (69%, $n = 512$, Table 1) was 35% higher than in 2017 (51%, $n = 1,287$). The statewide PPB of 3.67 (3.42-3.93 95% C.I., Table 1) was 11% higher than in 2017 (3.32, 3.16-3.49 95% C.I.). Regionally, PPH was higher in central and east regions (both 2.0) than in the west (1.8). Only the gobbler to hen ratio was lower (0.45 statewide, $n = 624$) in 2018 compared to 2017 (0.58, $n = 1,741$) and did not differ by region (Table 1).

We were not able to track the number of individual participants using the app in 2018; doing would have required user log-ins, which would have been cost prohibitive. Thus, we do not

know whether the decrease in total turkeys observed reflected fewer turkeys on the landscape (which would be counter to observed PPH) or simply less participation in the survey (agency public outreach was better in 2017). Hopefully with more years of data we can make this distinction.

For reference, see Tables 2 and 3 for results from 2017 and 2016 brood surveys.

Fall Turkey Season

Fall turkey hunting in Kentucky included an archery season concurrent with archery deer season (September 3–January 16), 2 one-week-long shotgun seasons (October 22–28 and December 3–11), and 2 crossbow seasons (October 1–16 and November 12–December 31). A fall turkey permit is required of residents and nonresidents in addition to a standard hunting license, except for landowners. Fall season bag limit is 4 turkeys, only 2 of which may be taken during shotgun seasons regardless of weapon used, and only 1 of which may be a male bird with a beard length ≥ 3 inches.

Reported fall harvest (2,369) was up 27% compared to last fall. The higher harvest reflects 2018's better hatch (Fig. 4).

Table 1. Data from Kentucky's wild turkey brood survey, 1 July – 31 August, 2018.

Region	Hens	Poults	Males	Unidentified	Total Turkeys	PPH ^a (95% CIs)	PPB ^b (95% CIs)	% Hens w/ Brood ^c (n ^d)	Male:Female Ratio ^e (n ^f)
Central	583	1,211	249	11	2,054	2.08 (1.84-2.33)	3.55 (3.28-3.85)	68.8 (244)	0.43 (295)
East	306	638	128	9	1,081	2.09 (1.70-2.56)	3.60 (3.12-4.14)	78.1 (121)	0.42 (145)
West	353	621	157	3	1,134	1.77 (1.38-2.19)	3.79 (3.21-4.41)	60.6 (128)	0.44 (155)
Statewide ^g	1,287	2,585	583	23	4,478	2.01 (1.83-2.21)	3.67 (3.42-3.93)	68.8 (512)	0.45 (624)

^aPoults-per-hen (calculated by bootstrapping the sample).^bPoults-per-brood (calculated by bootstrapping the sample).^cPercentage of hens that were observed with ≥ 1 poult during survey.^dNumber of observations where ≥ 1 hen was observed.^eTotal number of males observed during survey divided by total number of females observed during survey.^fNumber of observations where ≥ 1 hen or ≥ 1 male was observed during survey.^gMay include observations in which region was not indicated in data file.**Table 2.** Data from Kentucky's wild turkey brood survey, 1 July – 31 August, 2017.

Region	Hens	Poults	Males	Unidentified	Total Turkeys	PPH ^a (95% CIs)	PPB ^b (95% CIs)	% Hens w/ Brood ^c (n ^d)	Male:Female Ratio ^e (n ^f)
Central	1,653	2,153	1,072	8	4,886	1.31 (1.16-1.45)	3.77 (3.53-4.01)	44.2 (691)	0.65 (941)
East	586	720	370	5	1,681	1.23 (1.04-1.41)	2.58 (2.29-2.91)	58.0 (258)	0.63 (363)
West	876	1,293	385	4	2,558	1.48 (1.29-1.67)	3.11 (2.84-3.39)	58.0 (333)	0.44 (431)
Statewide ^g	3,141	4,216	1,837	28	9,222	1.34 (1.25-1.45)	3.32 (3.16-3.49)	51.1 (1,287)	0.58 (1,741)

^aPoults-per-hen (calculated by bootstrapping the sample).^bPoults-per-brood (calculated by bootstrapping the sample).^cPercentage of hens that were observed with ≥ 1 poult during survey.^dNumber of observations where ≥ 1 hen was observed.^eTotal number of males observed during survey divided by total number of females observed during survey.^fNumber of observations where ≥ 1 hen or ≥ 1 male was observed during survey.^gMay include observations in which region was not indicated in data file.**Table 3.** Data from Kentucky's wild turkey brood survey, 1 July – 31 August, 2016.

Region	Hens	Poults	Males	Unidentified	Total Turkeys	PPH ^a	PPB ^b (n ^c)	% Hens w/ Brood ^d	Male:Female Ratio ^e
Central	441	692	144	0	1,247	1.68	3.88 (101)	49.4	0.35
Eastern	386	601	379	0	1,366	1.56	4.22 (83)	45.3	0.98
Western	276	438	91	0	805	1.59	3.23 (77)	55.1	0.33
Statewide ^f	1,074	1,735	614	0	3,423	1.62	3.80 (262)	49.4	0.57

^aPoults-per-hen (Total number of poults observed during survey divided by total number of hens observed during survey).^bPoults-per-brood (Number of poults divided by number of hens for each observation where ≥ 1 hen and ≥ 1 poult was observed; PPB is the mean of all individual observations).^cNumber of observations where ≥ 1 hen and ≥ 1 poult was observed.^dPercentage of hens that were observed with ≥ 1 poult during the survey.^eTotal number of males observed during survey divided by total number of females observed during survey.^fMay include observations in which region was not recorded on survey card.

Wild Turkey Brood Survey 2018 with Survey 123

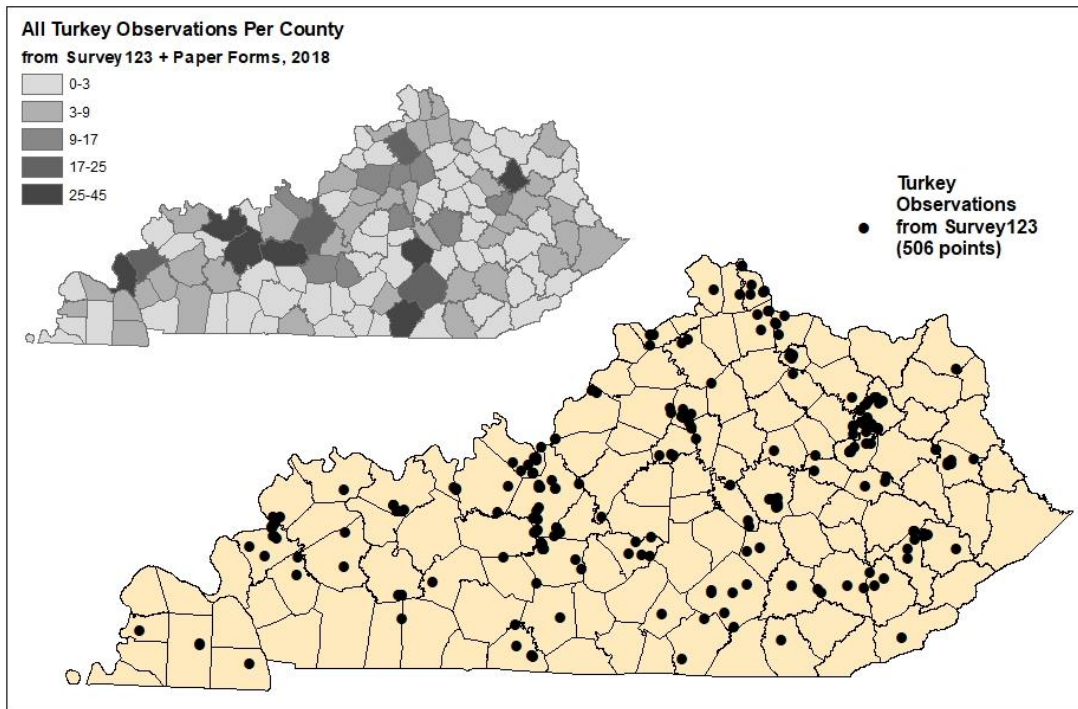


Figure 1. Locations of turkey observations from a brood survey in July and August, 2018. Main map shows locations collected via the Survey123 mobile phone app or website. Inset map summarizes observations by county.

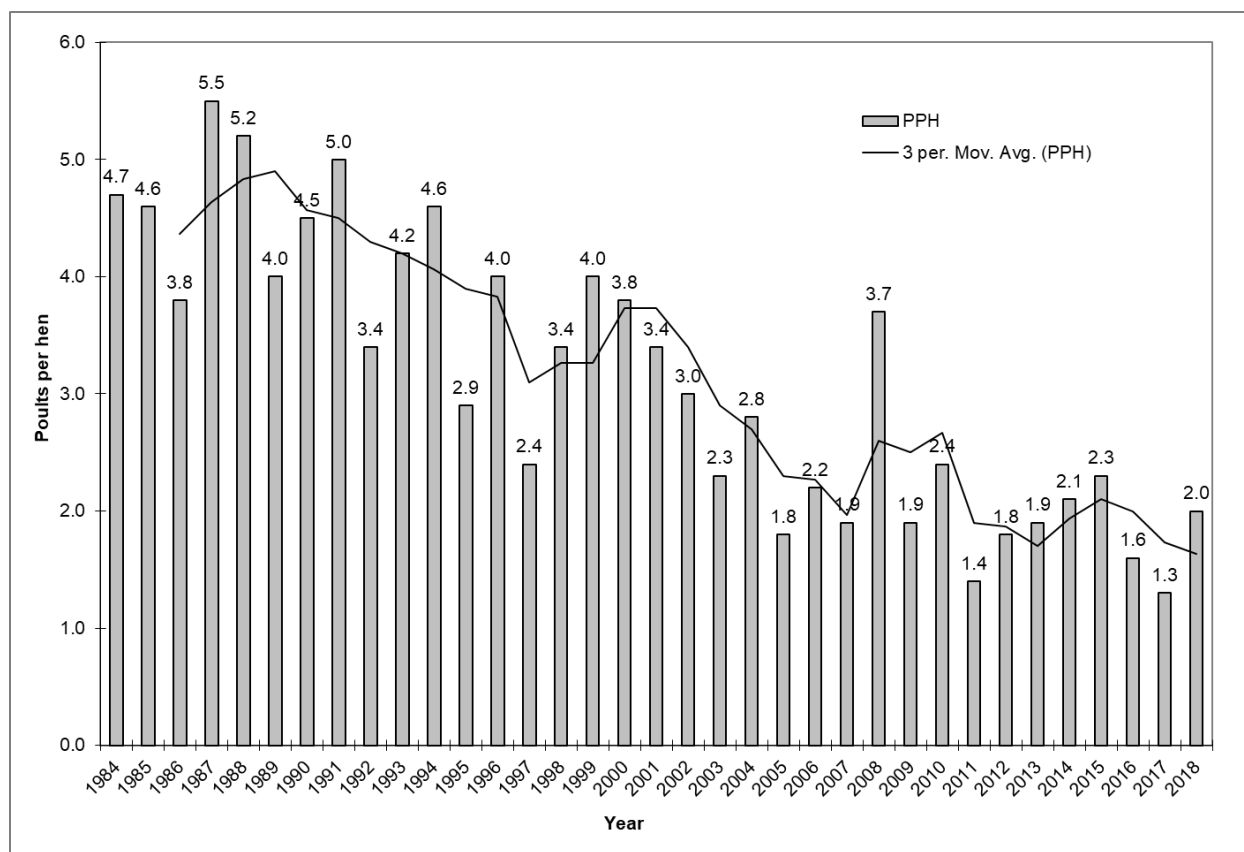


Figure 2. Poult-per-hen (PPH) ratios from brood surveys in Kentucky conducted July and August, 1984-2018. Three-year moving average shown.

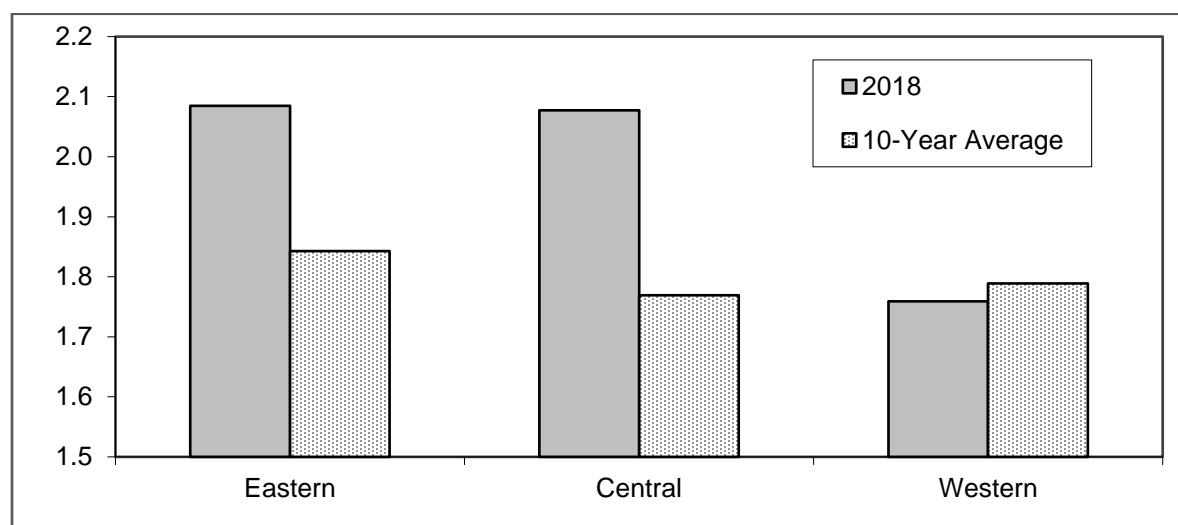


Figure 3. Poult-per-hen (PPH) ratios by survey region from brood surveys in Kentucky conducted July and August, 2018 vs. 10-year average.

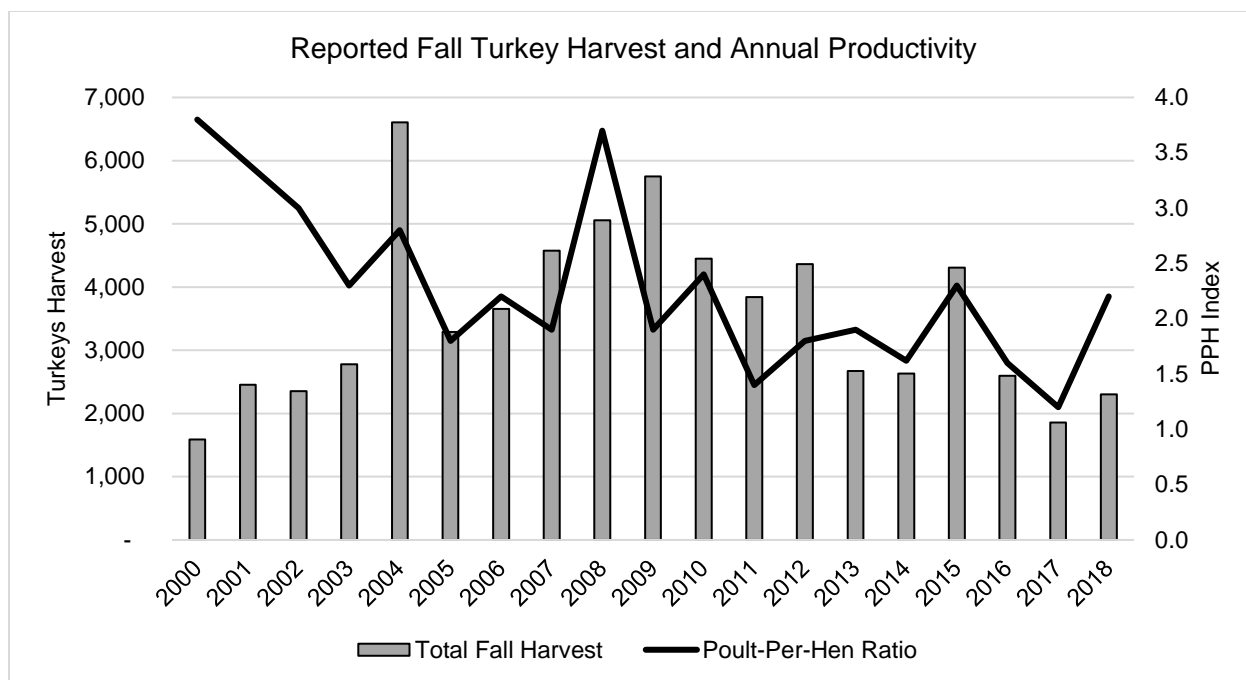


Figure 4. Fall turkey harvest and reproduction (Poult Per Hen index) in Kentucky, 2018.